



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20501
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,325	11/08/2001	Katsuya Kosaki	401440	5179

23548 7590 10/23/2002
LEYDIG VOIT & MAYER, LTD
700 THIRTEENTH ST. NW
SUITE 300
WASHINGTON, DC 20005-3960

EXAMINER

CHAMBLISS, ALONZO

ART UNIT PAPER NUMBER

2827

DATE MAILED: 10/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,325

Examiner

Alonzo Chambliss

Applicant(s)

KOSAKI ET AL.

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6, 9 and 10 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 November 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/477,289.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. Pre-amendment A filed on 11/8/01 has been fully considered and made of record in Paper No. 3. Therefore, claims 1-5 have been canceled and claims 6-10 are pending in the instant application.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/447,289, filed on 11/23/99.

3. An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification or in an application data sheet (37 CFR 1.78(a)(2) and (a)(5)).

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on 11/8/01 in Paper No. 2 was filed before the mailing date of the non-final rejection on 10/19/02. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

5. The corrected or substitute drawings were received on 11/8/01 in Paper No. 4. These drawings are not approved since the changes are made in red ink instead of black and based on the objections to the drawings below. New formal drawings are required.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 12 and 42. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

7. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested: " SEMICONDUCTOR DEVICE WITH A SUBSTRATE INCLUDING A FLANGE AND HEAT RADIATION LAYER ATTACHED TO THE SUBSTRATE ".

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

9. Claims 6, 9, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Kosaki (U.S. 5,872,396).

With respect to Claim 6, Kosaki discloses a semiconductor substrate 1 has first and second main surfaces with a semiconductor element in the first main surface, and having a peripheral surface contacting the first and second main surfaces (see col. 24 lines 57-67 and col. 25 lines 19-28; see all figures). A heat radiation layer 10 (i.e. PHS layer) is on the second main surface of the semiconductor substrate 1 (see col. 19 lines 21-25; Fig. 2). A flange (i.e. the metal layers extending away from the substrate) includes a plurality of metal layers 5, 9, 11, 13, 15 disposed on the peripheral surface of the substrate 1. The plurality of metal layers 5, 9, 11, 13, 15 comprise a first metal layer 5 containing palladium (Pd) on a side toward the first main surface. A second metal layer 15 of a nickel-based alloy is disposed on the surface layer containing Pd of the first metal layer 5, wherein the second metal layer has a top portion located below the first main surface. The second metal layer 15 is on the surface layer since second metal layer is on metal layers 9, 11, and 13, which reside on the first metal layer 5. A third metal layer 9, 11, 13 is disposed under the first metal layer 5 (see col. 25 lines 32-36, col. 27 lines 6-8, col. 28 lines 40-42, col. 30 lines 17-20, and col. 31 lines 52-59; Figs. 5a-5g and 8).

With respect to Claim 9, Kosaki teaches the first metal layer 5 comprising Ti layer under the Pd layer and a single layer (i.e. Au) (see col. 31 lines 52-67 and col. 32 lines 1-21; Fig. 8).

With respect to Claim 10, Kosaki teaches the second metal layer 15 made of Ni-P (see col. 30 lines 17-20).

Allowable Subject Matter

10. Claims 7 and 8 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach the combination the third metal layer comprising a nickel based alloy layer, a gold layer, and a laser-cut layer including one of a nickel layer and a chromium layer.

The prior art made of record and not relied upon is cited primarily to show the product of the instant invention.

Conclusion

11. Any inquiry concerning the communication or earlier communications from the examiner should be directed to Alonzo Chambliss whose telephone number is (703) 306-9143. The fax phone number for this Group is (703) 308-7722 or 7724.

Application/Control Number: 09/986,325
Art Unit: 2827

Page 6

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-7956.

Albert W. Paladini 10-21-02
ALBERT W. PALADINI
PRIMARY EXAMINER

AC

AC/October 19, 2002